

## REMARKS

### Summary of the Examiner's rejections

In the Advisory Action, the Examiner indicated that Applicants' proposed amendments will not be entered because they raise new issue that would require further consideration and/or search, they may raise the issue of new matter, and they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal, particularly the new limitation "below an acid-impervious temperature level of the particulate."

Additionally, the Examiner indicated that Applicants' arguments filed on April 7, 2003 have been considered but are not persuasive considering they are directed to the proposed amendments that have not been entered for the above recited reasons.

To fully address and resolve the issues raised by the Examiner, Applicants file the current amendment in the form of a request for continued examination (RCE) to justify further consideration of the amendments and to demonstrate that the above amendments to the claims are not new matter.

But first, Applicants reiterate the rejections set forth in the prior final Office Action mailed on January 10, 2003 in order to clarify the current stage of this application's prosecution. In that Office Action, Claims 16-36 were rejected, as understood, under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one of ordinary skill in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In particular, the subject matter expressed in the terms "high curing temperature powder adhesive" and "lower than a maximum acid-impervious temperature level of the particulate."

Claims 29-30 and 33-36 were rejected, as understood, under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one of ordinary skill in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In particular, the subject matter expressed in the terms "to mitigate the acid of the steel from penetrating therethrough."

Claims 16-25 and 27-30 were rejected, as understood, under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention with regards to the relative term “high curing temperature.” Claims 16-25 and 21-32 were rejected, as understood, under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention based on a view that it is unclear whether the Applicants’ invention is to claim the metal structure/fixture or the acid-containing part comprising the metal structure/fixture.

Claims 26-28 were rejected under 35 USC § 102 (b) as being anticipated by Millar et al. (US Patent No. 4,027,366).

#### **Reasons Rejections are Believed to have been Overcome**

Applicants respectfully submit that Claims 16 and 20, as amended, are believed to be allowable. In particular, Claims 16 and 20 have been amended to eliminate the terms “for forming an acid containing part into a desired shape” and “to mitigate the acid of the part from penetrating therethrough.” By this amendment, the Applicants have eliminated the recitation of future use to clarify that the invention being claimed is the metal structure/fixture and not the acid containing part comprising the metal structure/fixture. In this regard, Applicants respectfully submit that the rejection under 35 USC § 112, second paragraph based on a view that Applicants’ recitation of future use make Applicants’ intention unclear has been overcome by eliminating the recitation of future use.

In the Office Action, the Examiner rejected Claims 16 and 20, as understood, under 35 USC § 112, first paragraph based on a view that the specification does not convey to one of ordinary skill in the art, at the time the application was filed, that the inventors had possession of the claimed invention in regards to the subject matter of “high curing temperature.” The Examiner was not persuaded by the Applicants’ arguments filed on 10/28/02 in relation to the term “high” based on a view that:

“the sections noted by the Applicant actually support the Examiner’s position that the original disclosure only provides an upper limit and not a lower limit and hence would not reasonably convey an invention with ‘high curing temperature’

powder adhesive given that room temperature falls within the temperature limit of the original disclosure and is not typically considered a 'high' temperature. Though the Applicant has referred the Examiner to a recitation in the background section regarding high temperature polymer composite materials that cure above about 500°F that will corrode the steel fixture, this recitation refers to the composite material and not the powder adhesive in the coating on the steel fixture.<sup>1</sup> (emphasis added).

Applicants respectfully submit that the original disclosure provides a lower limit for the term "high curing temperature" of the powder adhesive. In support thereof, the specification states that:

"[t]he composite material is vacuum-bagged to the steel fixture and cured in an autoclave at an elevated temperature, all as known in the art. However, certain high-temperature polymer composite materials that cure above 500°F will corrode the steel fixture while contemporaneously producing a bad part that exhibits undesirable reduced oxidative properties and high porosity."<sup>2</sup> (emphasis added).

This quotation from the specification simply states the problem to be solved. Simply put, when composite material is cured at a high temperature on a steel fixture, the steel fixture corrodes and the cured composite material is not usable. The problem to be solved is linked to the present invention, as stated in the summary of the invention, based on a view that the specification states that a curing fixture coated with the present invention is able to produce a cured composite material that is useable after the composite material has been subjected to temperatures above 500° F (i.e., the present invention solves the problem to be solved). In particular, the summary of the invention of the specification in describing the structure/fixture claimed in Claims 16 and 20 and the results therefrom states that:

"A steel substrate coated in accord with the present methodology is particularly useful as a curing fixture upon which resin-impregnated fiber of polymer composite material is placed to thereby give molded parts made therefrom a desired shape. Production of a part is accomplished by vacuum bagging the

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<sup>1</sup> Paper 22, Pg. 5.

<sup>2</sup> Col. 1, Ln. 27 to Col. 2, Ln. 6.

composite material to the steel fixture and curing the so produced part in place on the fixture in an autoclave at an elevated temperature. In this manner the acid impervious curing fixture of the present invention allows production of composite parts without the danger of leaching iron from the fixture to thus assure full-utility part fabrication.”<sup>3</sup> (emphasis added).

The Examiner is reminded of MPFP section 2163.04 (II) which states that the basis for the Examiner rejection under 35 USC 112, paragraph 1 should be reviewed in view of the record as a whole. In other words, just as one sentence may not be read in isolation with respect to the paragraph that the sentence is located within, a sentence or paragraph may not be read in isolation with respect to the whole application. In this regard, the two statements quoted above when read as a whole and in context with the other parts of the specification discloses that the curing temperature of the powder adhesive must be above at least 500°F thereby defining the lower limit of the “high curing temperature.”

Perhaps, a hypothetical powder adhesive having a curing temperature below 500° F would be useful in illustrating the error, in the Applicants’ perspective, of the Examiner’s reading of the specification. In particular, if the adhesive disclosed in the specification has a curing temperature lower than 500°F or at room temperature, then the high-temperature nature of the polymer composite material, which is cured above 500°F, would cause the adhesive to melt away when the high temperature composite material is cured and expose the steel surface of the fixture to the composite material, and thereby the composite part in contact with the fixture would leach iron from the fixture such that full utility part fabrication is not assured. Simply put, if room temperature, as the Examiner understands the specification to mean, falls within the temperature limit of the original disclosure, then the composite part would continue to corrode the steel fixture

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<sup>3</sup> Col. 3, ln. 27 to Col. 4, ln. 2.

and the problem to be solved is not solved by the present invention. As such, the lower limit of the curing temperature of the adhesive must be above 500°F to prevent the adhesive from melting away when the composite material is cured on the fixture coated according to the present invention at temperatures above 500°F. Hence, the disclosure as filed provides the upper and lower temperature curing limits of the adhesive.

Additionally, Applicant brings to the attention of the Examiner that the above quoted language of the specification additionally provides support for the proposition that the original disclosure refers to both the composite material and powder adhesive when they are cured above 500° F. In particular, the specification states:

“A steel substrate coated in accord with the present methodology is particularly useful as a curing fixture upon which resin-impregnated fiber of polymer composite material is placed to thereby give molded parts made therefrom a desired shape. Production of a part is accomplished by vacuum bagging the composite material to the steel fixture and curing the so produced part in place on the fixture in an autoclave at an elevated temperature. In this manner the acid impervious curing fixture of the present invention allows production of composite parts without the danger of leaching iron from the fixture to thus assure full-utility part fabrication.”<sup>4</sup> (emphasis added).

This quotation discloses that the fixture is coated with the adhesive and particulate. Thereafter, the composite material is placed on the coated fixture and cured in a vacuum bag. Simply put, when the composite material is cured, the composite material, fixture, adhesive, and particulate are found within the same vacuum bag subjected to high temperatures within the same autoclave. For the foregoing reasons, Applicants respectfully submit that the rejections under 35 USC § 112, first paragraph has been overcome.

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<sup>4</sup> Col. 3, ln. 27 to Col. 4, ln. 2.

Claims 16 and 20 were additionally rejected, as understood, under 35 USC § 112, first paragraph, based on a view that the specification does not provide support for the limitation “lower than a maximum acid-impervious level of the particulate.”

As discussed in the Applicant’s Amendment mailed on October 21, 2002, the basis for the Amendment is found within the specification. In particular, the specification states that “the particulate is acid impervious up to about 700° F, while the powder adhesive in all cases of course cures below the acid impervious level of the particulate. Applicant will now discuss the meaning of the above quoted language in accordance with basic English grammar. In particular, the first portion of the sentence, namely, the particulate is acid impervious up to about 700° F, refers to a maximum temperature at which the particulate is still acid impervious. The second portion of the sentence, namely, “while the powder adhesive in all cases of course cures below the acid impervious level of the particulate” refers to the curing temperature of the powder adhesive as a function of the maximum temperature at which the particulate is still acid impervious. The reference of the acid impervious level of the particulate in the second portion of the sentence must be read in relation to the first portion of the sentence. In particular, the acid impervious level of the particulate stated within the second portion of the sentence has its antecedent basis within the first portion of the sentence. The first portion of the sentence as discussed above refers to the maximum at which the particulate is still operative in being acid impervious. As such, the reference of the acid impervious level of the particulate within the second portion of the sentence must also refer to the maximum temperate at which the particulate is acid impervious.

As stated above, the second portion of the sentence refers to the temperate of the powder adhesive as a function of the maximum temperature at which the particulate is acid impervious. In particular, when the sentence is read as a whole, the powder adhesive has a curing temperature below a maximum temperature at which the particulate is still operative as being acid impervious. Simply put, the above-quoted language found within the specification provides the basis for the claim language of Claims 16 and 20, specifically, “the adhesive having a curing temperature lower than a maximum acid impervious temperature level of the particulate”.

As discussed above, the Examiner is reminded that the record must be read as a whole meaning that the first portion of the above-quoted sentence and the second portion of the above-quoted sentence must be read together to be in harmony with each other. Hence, Applicants respectfully submit that the Examiner’s rejections of Claims 16 and 20 under 35 USC section 112, first paragraph in relation to the subject matter of “lower than a maximum acid-impervious temperature level of the particulate” has been overcome.

Furthermore, Claims 16 and 20 were rejected, as understood, under 35 USC § 112, second paragraph, as being indefinite with regards to the relative term “high curing temperature.” As discussed above, the lower limit of high curing temperature is above 500°F. And, as discussed in the specification, the upper limit of high curing temperature is below 700°F.<sup>5</sup> As such, the specification contains the standard in measuring “high curing temperature.”<sup>6</sup> For the foregoing reasons, Applicants’ respectfully submit that Claims 16 and 20 are allowable.

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<sup>5</sup> Col. 5, Ins. 7-10.

<sup>6</sup> MPEP section 2173.05(b).

Applicants respectfully submit that the dependent claims of Claim 16 and 20 contain additional patentable subject matter. In particular, new Claims 37 and 38 which depend on Claims 16 and 20, respectively, state that "the curing temperature of the adhesive is above about 500°F." The basis for the new Claims 37 and 38 are found within the specification as referred to in Applicants' arguments in relation to Claim 16 and 20. Hence, Applicant respectfully submit that the dependent claims of Claims 16 and 20, namely, Claims 17-19, 21-25 and 37-38 are in condition for allowance.

In the Office Action, as understood, Claim 26 was rejected under 35 USC § 112, first paragraph based on a view that the disclosure as filed did not provide support for the limitation "lower than a maximum acid impervious temperature level of the particulate." In this regard, Applicants respectfully submit that the specification provides support for the subject matter of "lower than a maximum acid impervious temperature level of the particulate" for the same reasons discussed in relation to Claim 16. Hence, Applicants respectfully submit that the Examiner's rejection under 35 U.S.C. §112, first paragraph in relation to Claim 26 has been overcome.

Additionally, as understood, Claim 26 was rejected under 35 USC § 102(b) as being anticipated by Millar et al. Applicants respectfully submit that Millar et al. does not disclose the invention in Claim 26. In particular, Millar et al. does not disclose (1) a mixture of adhesive and particulate on the steel surface and (2) a temperature relationship of an adhesive having a curing temperature below an acid-impervious temperature level of the particulate.

In relation to the mixture, Millar et al. discloses a mixture of powders.<sup>7</sup> However, when the mixture is deposited on the surface, the powders within the mixture stratify into

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<sup>7</sup> Millar et al., abstract.

distinct layers.<sup>8</sup> In other words, the powders in the mixture are separated or unmixed into layers when the powders are deposited on the surface. Additionally, Millar et al. discloses that “the coating composition … produces a plurality of distinct, superimposed layers of coating material on the [surface].” (emphasis added).<sup>9</sup> Simply put, the powders disclosed in Millar et al. may begin as a mixture before the powders are deposited on the surface, but the powders do not end as a mixture after the powders are deposited on to the surface; instead, the powders are separated into “distinct, superimposed layers.” In this regard, Millar et al. does not disclose a mixture deposited on the surface.

Furthermore, the disclosure of Millar et al. teaches away from depositing a mixture on the surface based on a view that mixing the layers would defeat the very purpose of the invention disclosed in Millar et al. As understood, the purpose of Millar et al. “relates to a process for electronstatically applying a multilayer coating to substrates.”<sup>10</sup> (emphasis added).

In relation to the temperature relationship, as discussed in the Applicants’ prior response, Millar et al. does not disclose a curing temperature of the adhesive as a function of the acid-impervious temperature level of the particulate. The disclosure appears to be absent any relationship between the temperature characteristics of different powders in the mixture. In this regard, Millar et al. does not disclose a temperature relationship between the various components in the mixture. Hence, for the foregoing reasons, Applicants respectfully submit that Claim 26 is allowable.

In the Office Action, the Examiner rejected Claims 29-30 and 33-36, as understood, under 35 USC § 112, first paragraph, as containing subject matter not

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<sup>8</sup> Id.

<sup>9</sup> Millar et al., Col. 8, lns. 20-22.

<sup>10</sup> Col. 2, lns. 39-41.

described in the specification, specifically, acid contained in steel. In response, Applicants have substituted the term “steel” to “part.” The basis for the part containing steel is found within the specification. In particular, the specification states that composite parts are “made from material that has an acid content.”<sup>11</sup> Hence, Applicants respectfully submit that the rejection of Claims 29-30 and 33-36 under 35 USC § 112, first paragraph has been overcome.

In the Office Action, the Examiner rejected Claim 31 under 35 USC § 112, second paragraph based on a view that Applicants’ recitation of future use makes Applicants’ intention of claiming the metal structure/fixture or the acid-containing part comprising the metal structure/fixture unclear. Applicants respectfully submit that a recitation of future use in a claim does not render the claim indefinite under 35 USC § 112, second paragraph. In support thereof, in Ex parte Thibault,<sup>12</sup> the Patent Office Board of Appeal stated that “[e]xpressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.” In Claim 31, the reference to the acid containing part is more than a mere recitation of future use; rather, the acid containing part determines the curing temperature of the adhesive. More particularly, the curing temperature of the adhesive is a function of the leaching temperature of the acid containing part. As understood, the cited prior art does not disclose, suggest, or make obvious the invention of Claim 31. Hence, Application respectfully submits that Claim 31 and its dependent Claims 32-36 are allowable.

#### CONCLUSION

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<sup>11</sup> Col. 4, Ins. 18-19.

<sup>12</sup> 164 USPQ 666, 667 (Bd. App. 1969).

On the basis of the foregoing, Applicants respectfully submit that Claims 16-38 are in condition for allowance. Applicants therefore respectfully submit that all the stated grounds of rejection have been overcome. Accordingly, an early Notice of Allowance is respectfully requested. Should the Examiner have any suggestions for expediting allowance of the application, the Examiner is invited to contact Applicant's representative at the number listed below.

Respectfully submitted,

Date: July 8, 2003 By: Bruce B. Brunda  
Bruce B. Brunda  
Registration No. 28,497  
STETINA BRUNDA GARRED & BRUCKER  
75 Enterprise, Suite 250  
Aliso Viejo, California 92656  
Telephone: (949) 855-1246

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